

Course Title	Physics for Everyday Life
Course Code	NPHY-110
Credit Hours	CH3
Pre- requisites	
Learning outcomes	Overview of physics, Scientific method, Units and measurements, Introduction to applications in technology and environment
Contents	<p>Mechanics in Daily Life: Motion and forces, Work, energy, and power, Simple machines (levers, pulleys, inclined planes), Vehicles, sports, and everyday tools</p> <p>Electricity and Magnetism in Technology: Electric charge and current, Voltage, resistance, and Ohm's law, Magnetic fields and forces, Household electronics, electric motors, and generators</p> <p>Light and Optics in Everyday Life: Nature of light, Reflection, refraction, and lenses, Optical instruments, Eyeglasses, cameras, and fiber optics</p> <p>Physics of Renewable Energy Sources: Solar energy: photovoltaic cells and solar heating, Wind energy: turbines and power generation, Hydroelectric energy: dams and water turbines, Geothermal energy: heat pumps and geothermal plants</p> <p>Physics in Environmental Science: Atmospheric physics: weather and climate, Pollution and its physical properties, Energy efficiency and conservation, Greenhouse effect and global warming, Climate models and predictions, Green houses and other sustainable methods</p> <p>Physics in Health and Medicine: Medical imaging: X-rays, MRI, and ultrasound, Radiation therapy, Biomechanics and prosthetics, Diagnostic tools and treatments</p> <p>Nanotechnology and Material Science: Nanostructures and properties, Material strength and properties, Electronics, coatings, and medicine</p> <p>Nuclear Physics and Its Applications: Basics of nuclear physics, structure of atom, Nuclear energy: fission and fusion, Nuclear power plants and medical uses</p> <p>Physics in Space Exploration: Gravity and orbits, Space travel and propulsion systems, Satellites, space telescopes, and missions</p>
Teaching-learning Strategies	Classroom teaching / Lecturing
Assignments- Types and Number	Problem sheet: 3-4
Assessment and Examinations	<p>Mid-Term Assessment: 35%</p> <p>Formative Assessment: (25%): It includes classroom participation, attendance, assignments and presentations, homework, attitude and behavior, hands-on-activities, short tests, quizzes etc.</p> <p>Final Term Assessment: 40%</p>
Text Books	<ol style="list-style-type: none"> 1. Conceptual Physical Science By <u>Paul G. Hewitt</u>, <u>John Suchocki</u>, <u>Leslie A. Hewitt</u> · 2012, Pearson 2. Energy, Environment, and Climate by Richard Wolfson, 2012, W.W. Norton 3. The Physics of Everyday Things: The Extraordinary Science Behind an Ordinary Day by James Kakalios, 2018 4. Applied Physics, By <u>Dale Ewen</u>, <u>Neill Schurter</u>, <u>P. Erik Gundersen</u> · 2005, Pearson 5. Sustainable Energy - Without the Hot Air by David J.C. MacKay, 2016, Bloomsbury

